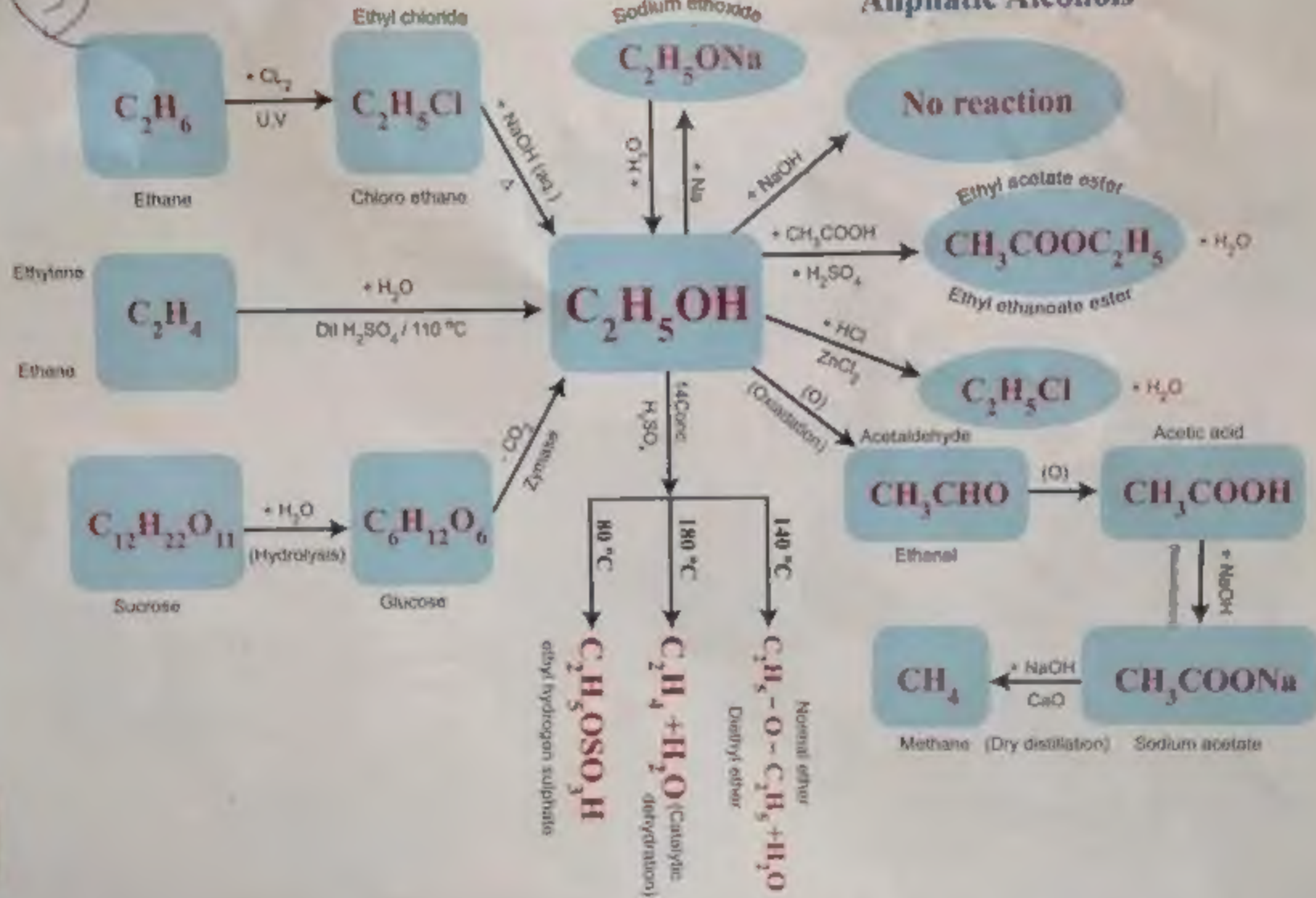


# Aliphatic Alcohols



# Diagram

$C_6H_6$  Aromatic benzene



Coal tar

(Fractional distillation)  
 $80^\circ C$

$C_6H_{14}$

Normal hexane

$Pt/\Delta$

$3C_2H_2$

Ethyne

Red hot  
Nickel tube

$C_6H_5OH$

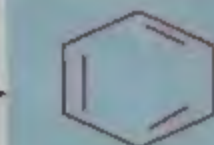
Phenol

$Zn/\Delta$

$NaOH$   
 $CaO/\Delta$

$C_6H_5COONa$

Sodium benzoate



Addition

Substitution

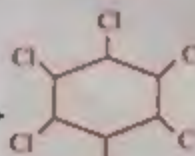
$3H_2 / Ni$

$\Delta$   
(Hydrogenation)



Cyclo Hexane

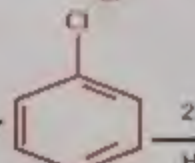
$3Cl_2 / UV$   
(Halogenation)



Hexa Chloro Cyclo Hexane

$Cl_2 / UV$

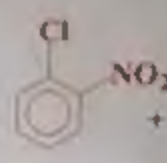
$FeCl_3$



Chloro Benzene

$2HNO_3$

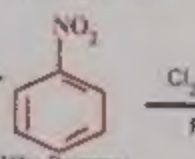
$H_2SO_4$



Ortho and para nitro chloro benzene

$HNO_3$

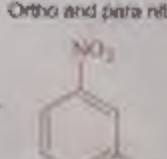
$H_2SO_4$



Nitro Benzene

$Cl_2 / UV$

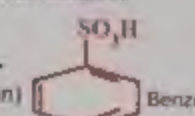
$FeCl_3$



Meta chloro nitro benzene

$H_2SO_4$

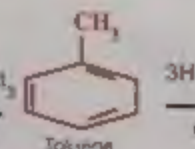
(Sulphonation)



Benzene Sulphonic acid +  $H_2O$

$CH_3Cl / AlCl_3$

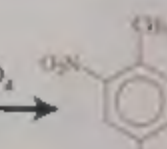
(Alkylation)



Toluene

$3HNO_3 / H_2SO_4$

(Nitration)



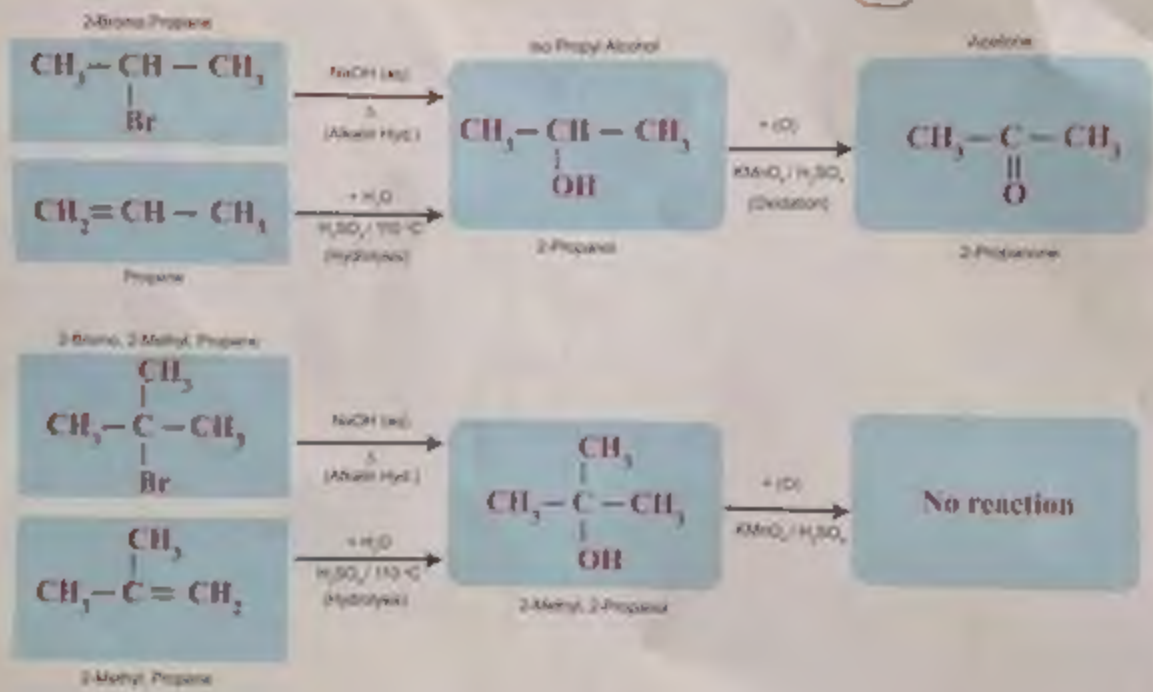
+  $3H_2O$

T.N.T.

# Diagram

## Secondary and tertiary Alcohol

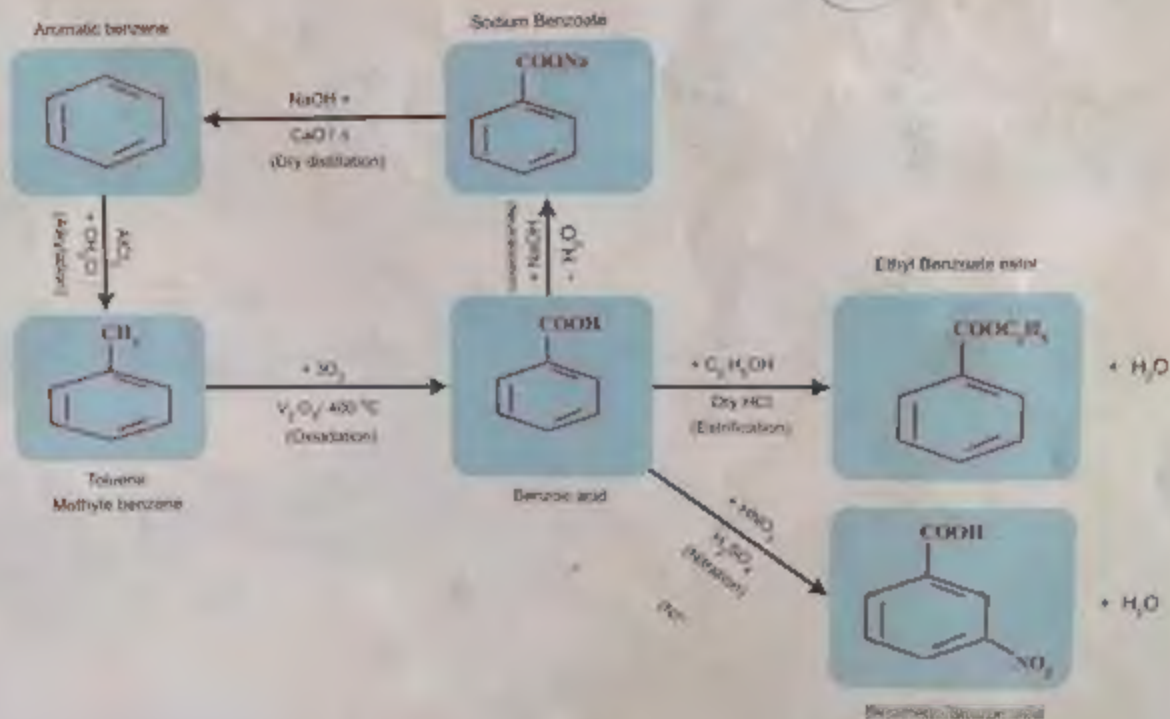
6



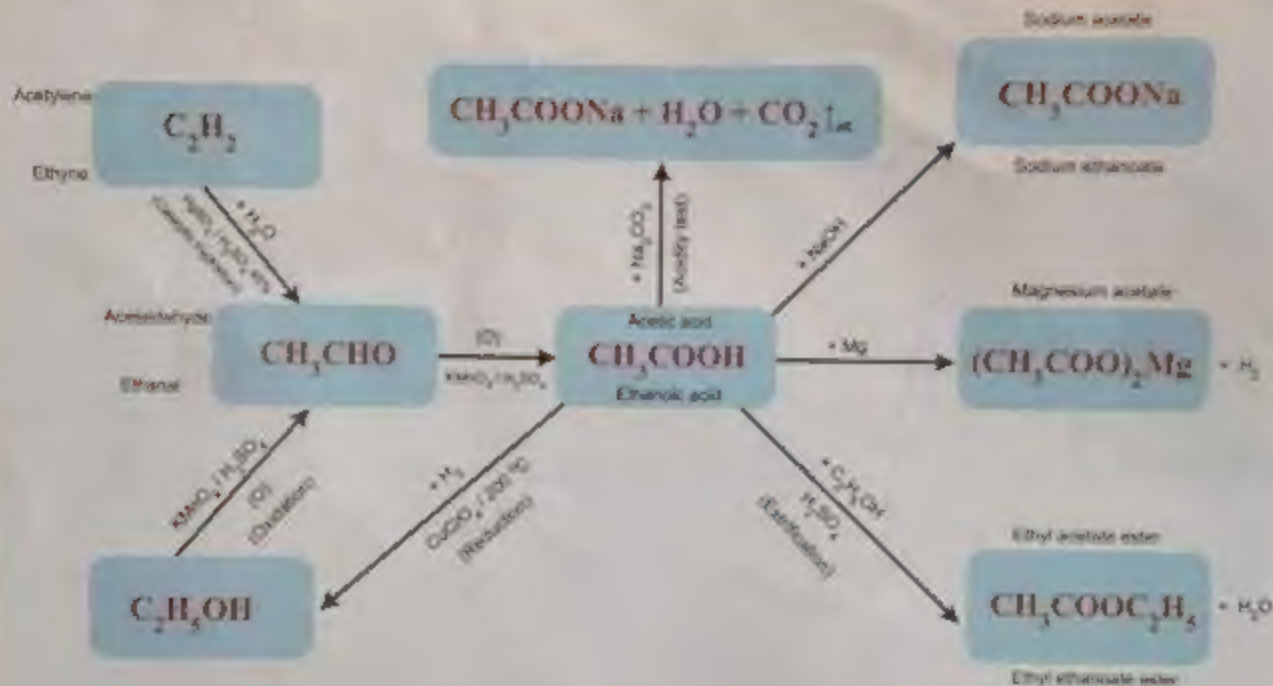


# Aromatic Carboxylic Acids

9



Aliphatic carboxylic acids



# Phenols

7

Calcium carbide



Ethyne

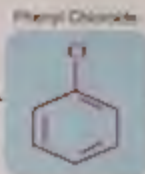
Red hot  
Fe tube  
Ternization



Aromatic benzene



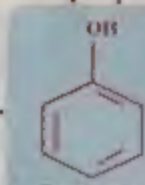
$\text{FeCl}_3$  / UV



Chloro benzene

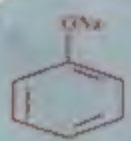


300 °C  
(300 atm)

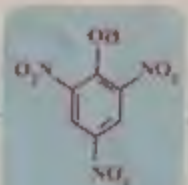
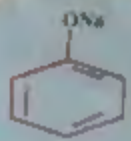


Carbon acid phenol

Sodium Phenoxide



Sodium Phenate



2,4,6-Tr Nitro Phenol

$\text{Br}_2$  / Water

$\text{FeCl}_3$

$\text{CH}_3$

White ppt.

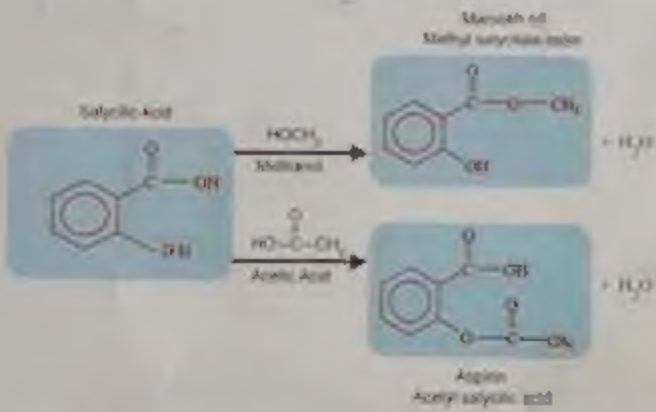
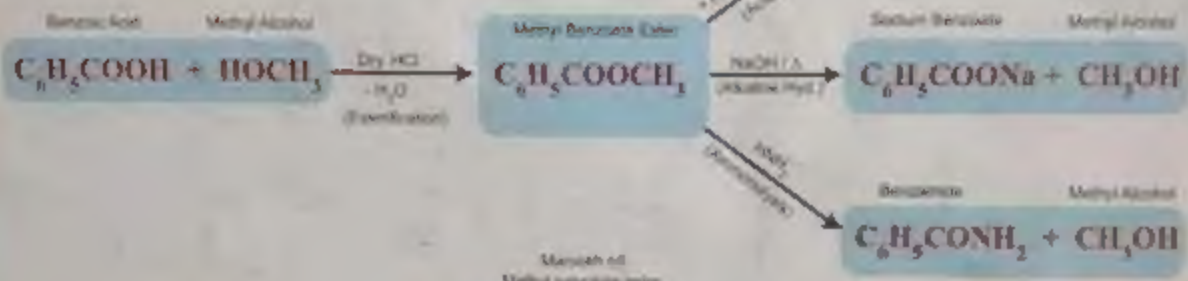
Violet color

No reaction

Bakelite

Aromatic Esters

11



# Diagram

## Aliphatic Esters

10

